SCIENTIFIC AMERICA

## Pointers From a Pen Maker

## A Fountain Pen Combined With a Mechanical Pencil Is the Latest Successful Product of a Veteran Inventor

By MILTON WRIGHT

HERE are two main courses for any inventor to take. He can sell or lease the products of his brain to other people, getting in return a payment in cash or a royalty, or he can make and sell the invented article himself. By the first course he can make some money—in some cases a considerable amount of money, but, of necessity, the great bulk of the profits from his ideas go to someone else. Only by keeping in his own hands the business revolving about his invention can he realize fully the possibilities there are in it."

So says Julius Schnell, who probably knows more about the making of fountain pens than any man living. Schnell should know whereof he speaks, for he has tried both courses—first letting other people make the major profits from his work, and later running his own business founded on his own inventions. His newest product is the latest development in fountain pens—the combination fountain pen and pencil.

WE knew of Schnell's reputation; we had heard of how he had been making nationally known fountain

pens for other manufacturers and of how at the age of 58 he had decided to throw overboard all the steady profits he was making and plunge into a new business. The story of his experience, it seemed, ought to have something of value in it for the rest of us. We sought him out.

"Just how big is the fountain pen business?" we asked, by way of getting started.

"There are twenty million pens manufactured every year in this country," he replied. We were inclined to argue the

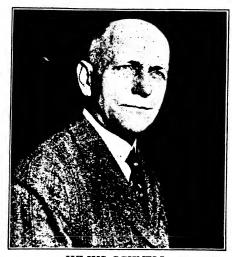
point. At that rate pens would have been made in six years for every man, woman, and child in the nation. Now every man, woman and child doesn't have a fountain pen. Furthermore, the people who do own fountain pens often keep them for years. The quantity seemed too big.

"Every year two and a half million pens are lost and three million are broken," Schnell explained. "There are more pens made every year than the year before. That steady record of increase has been going on since the first fountain pen was made in France in 1846."

"But twenty million is a lot of pens in one year, and, of course, they must be sold in rather small lots."

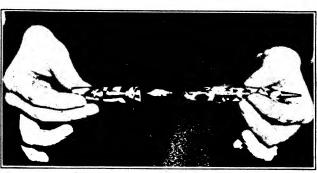
"Not so small as you might think. The American Telephone and Telegraph Company recently gave me an order for 75,000 pens."

"But what could one company do with so many pens?"



JULIUS SCHNELL

He has learned that inventors profit by becoming manufacturers of their products



A USEFUL AND BEAUTIFUL HYBRID

In addition to combining the fountain pen and the mechanical pencil, the inventor patented a new clip and filler

"Place one in the hands of each employee. The telephone company has found that it is bad business for the employees to make notes with lead pencils. They get marked up or rubbed out and many a valuable memorandum has become illegible or lost. The company's executives figure that money is saved by having all reports made in ink. They assign a fountain pen to the employee and if he loses it he must replace it at his own expense; if he leaves the company he must turn it in."

This was interesting, but it was getting away from the purpose of our visit, which was to find out how this inventor and manufacturer in the field of fountain pens had made such a success. To get back again we asked:

"How did you happen to get into this business?"

"Like most practical inventors, I was a mechanic," he answered. "I had learned to be a machinist and tool maker in Alsace, where I was born. When I came to this country at the age of 21, I went to Akron, Ohio, because I had about 250 cousins there, none of whom I had ever seen, but all of whom I wanted to meet. It took me six months to visit all of them.

"The B. F. Goodrich Company seemed a rather ideal place for me to work, for a rather unique reason. They had a mighty good employees' band and I wanted to join it. They welcomed me with open arms because I could play four instruments—the flute, the piccolo, the clarinet, and the trombone. In the shop I made more money than any of the other men because I was an expert tool maker.

"AFTER a time I quit. Being young and restless, I drifted to Cincinnati, where I got a job with O. E. Weidlich, manufacturer of foun-

tain pens. Sometimes, when business wasn't so good, he would "hang me up" for my salary. I wasn't very fond of that quaint custom, so I left him to go with John Holland, famous pen maker back in the nineties.

"The Swan Pen Company heard of various things I had been doing to speed up the making of pens and sent for me in 1897 to enter their New York factory. I stayed with them until 1903, when I opened up a little shop of my own to make fountain pens and parts

for manufacturers."
"Was there much fountain pen work to do in 1903?"

"Not in comparison with the size of the business today. The fountain pen was still in its infancy. My first order came from Cleveland for ten gross of holders. Then I saw Edward Todd and Company and they promised to buy ten gross a week. The next year I contracted with the Conklin Pen Company. Their first order was for ten dollars' worth of holders. It was so small that I investigated to see if it wasn't a mistake. That was all it was, but two years later I signed a contract

with them for 600,000 holders. At 36 cents per holder that was a pretty big contract for me in those days.

"In 1912 Schaeffer came east and developed his patents. The next year he wanted me to join forces with him and go to Fort Madison. I couldn't see leaving New York and so I passed up my first chance to become a millionaire."

"How did you get orders for pen

holders?"

"The manufacturers knew me and every fall I would go on the road, show them some new ideas and come back with orders for 700,000 or 800,000. In 1917 a strike upset the fountain pen business generally, but I was paying my workmen more than others were, so I had little trouble. There were then about 60 men in my factory.'

F business was going on so smoothly, Mr. Schnell, why did you think of changing your methods?"

"Because I could see that it might not always go smoothly. Do you remember the Dunn pen? It was a big seller several years ago. I had a contract with Dunn for a half million hold-When he failed I lost a lot of money and I realized that it would not only be a lot more profitable but a lot safer to be in business for myself. I began waiting for an opportunity."

And what was this opportunity?"

"A new product. One day about four years ago a man named Wilhelm came into the factory, showed me a combination pen and pencil and asked me if I could make it. It was almost identical with the model of a combination I had made back in 1892 and then had forgotten about. I got it out of the attic and found the date scratched on



INSTALLING THE RUBBER SAC

In order to utilize the full capacity of the rubber sac, an improved device for filling the pen was invented.

Most pens are lost or broken before they wear out



ONE OF THE FIRST STEPS IN MANUFACTURING

Grinding and boring the composition material used in making fountain pens. It takes just 28 seconds to produce a complete combination pen and pencil with modern machinery

it. Wilhelm and I might have had a row about it but we were both reasonable and decided to join forces and look around a bit to see how we could put the combination pen and pencil idea over. I made some new models.

7ILHELM was traveling out west. In Dallas he interested Clarence M. Wheeler, a real estate operator, in the idea and Wheeler came east and decided to join forces with me in manufacturing and selling the new combination article, which we decided to call the Penselpen. Wilhelm de-

veloped other interests and we bought him out.

"There was a lot of work to be done. The pen holders had to be perfected. Many of them would get broken when the cap was unscrewed. I experimented a bit and fixed that up. I got a patent on a new feed bar. Then I got a patent on a new filling lever, making it easier to fill the pen, than by any method heretofore known. The public took to the new article from the start.

'The clip on the average fountain pen is not durable, so I began groping for a new The day Lindbergh took off for Europe the idea came to me. Why not, I asked, design a clip to look like an airplane? I did it. It was a beauty. Not only did it look good, but it wouldn't break, any stress on the shank of the clip being distributed out along the

wings. Two days after my patent was issued a lawyer came to the factory and offered me 10,000 dollars for it. Fortunately, I didn't take his offer, for that clip is our biggest selling feature. It sells 75 percent of our holders."

"How many pens have you made altogether?"

"In my time I have made more than twenty million pens. I made three quarters of a million for Dunn, one of my biggest customers."

"How many patents have you taken

"Seven. The first was on an ink feeder. I got that in 1903.'

"Did you make money on any of your patents?"

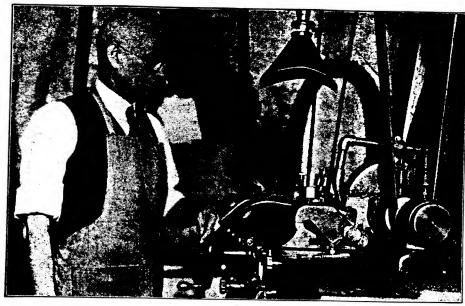
"I made money on all of them." "How?"

WOULD incorporate the new feature on each pen holder and add five or six cents to the price to the manufacturers. They were glad to pay it."

"That has amounted to a good deal of money, hasn't it?"

"Yes, but not enough. In five years I can make more money working for myself than in 20 years not working for myself. That is true of any inventor. I really believe it is safer, too."

We went through the factory. Here was a machine grinding down and polishing tubes for the pen barrels. Water kept playing upon them throughout the operation to keep the friction from overheating them. Next we saw little white rings being sweated on caps for purposes of ornamentation. These rings are a waste product of condensed milk. Now we saw them inserting hard-rubber pen sections, the little SCIENTIFIC AMERICAN



THE INVENTOR-MANUFACTURER IN HIS FACTORY

Mr. Schnell explains that his success as a pen-maker has resulted from introducing a popular new product in a field where the competition was keen and the demand almost unlimited

parts that fit under the gold tips. Over at another machine they were polishing pen barrels made of a combination embodying fish scales; these are the mottled black and white pen barrels which suggest mother-of-pearl, so popular now. Two final polishing wheels. one covered with muslin and one with flannel put the finishing touches on the barrels. These wheels, by the way, are made from parts of Ford automobiles. And so it went, down to affixing the airplane clips, inserting the rubber sacks. adding the pencil tips, adjusting and inserting the gold points, and all the rest of it down to the final inspection.

"How long does it take to make a pen and pencil combination?" we queried.

"Twenty-eight seconds."

"How long would it take one man if he made it all?"

"THERE are only 12 men in the United States who can make a fountain pen complete. Working with all the latest equipment, it would take one of those 12 about three and a half hours. Working without machines, it would take him two days."

"Do people find the combination pen and pencil much more convenient than a pen and a pencil separately?"

"Not only more convenient, but more efficient. One of the banks in New York made a practical test recently with two entry clerks. One man was given a pencil and a pen and one man a combination pencil and pen. In the course of a day, it was found, the man with the combination did 30 percent more work than the other.

"People buy pens for lots of reasons. I know of one man who ships these combinations to Africa every month where they are exchanged for ivory tusks. Sometimes a man will buy a pen because he likes its looks, even if he

doesn't need one. Color has an effect on sales of pens. Would it surprise you to know that 85 percent of the redheaded men who buy pens buy red ones? Women buy pens to match their manicure sets. Recently many men have been using two pens, one to go with a desk set and one to carry in the pocket."

"From your experience, Mr. Schnell, would you say that it pays to be an inventor?"

"It has paid me and I believe it would pay every inventor where the same conditions are present as were present in my case. In the first place, the inventor must know his particular industry thoroughly. He must know how things are made and sold and he must be able to judge what will appeal to the public and what will not.

"In the second place, the inventor

must be in a field in which there is a big demand. The more competition there is, the better it is for the man with a new idea. And in the third place, the inventor must have adequate patent protection.

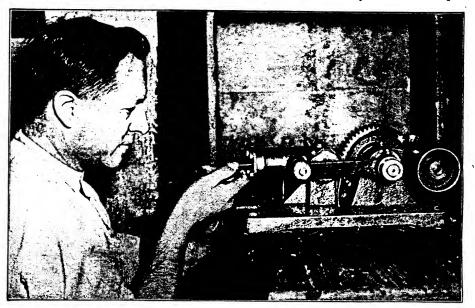
"Yes, there is money in inventing. There is more money, however, in manufacturing. Where the same man is both inventor and manufacturer, and the invention is something the public wants, then that man is sitting on top of the world."

"WHO would you say is the original inventor of the fountain pen as we know it today?"

"That is something that is lost in the dim mists of antiquity. The ancient Egyptians had a kind of stylus which carried its own supply of ink and ever since then men have been trying all sorts of ingenious devices to obviate the necessity of dipping into ink.

"When Lewis Edson Waterman applied at the Patent Office for his grooved-rubber feed device, he found that about a thousand patents on fountain pens had been issued before his. There have been still more issued since. It isn't the number of changes that are made in fountain pen designs that count, however; it is the merit of the particular invention that marks real progress. Waterman made a distinct advance in the art, and the profits he made were deservedly great. I have reason to believe that I, too, have made inventions that are improvements.

"Inventors sometimes are measured by the number of patents they obtain. I know of one man who has obtained more than 80 patents and has never made a dollar out of any of them. He is not practical. I know other inventors who have concentrated on one invention. They are the ones who have succeeded technically and financially."



SWEATING METAL BANDS ON PEN CAPS

After the bands are attached to the caps, another machine polishes them. The popular black and white barrels for pens and pencils are made of a composition embodying fish scales